

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A method for synchronizing a base station to a mobile station, comprising:

transmitting a signal sequence $K(i)$ of length n from the base station to the mobile station in a synchronization channel, the mobile station using the signal sequence $K(i)$ to determine a timing of the base station, the signal sequence $K(i)$ being obtainable by:

repeating, n_1 times, a second signal sequence element $K_2(k)$ of length n_2 to form a second signal sequence, the second signal sequence being modulated with first signal sequence elements $K_1(j)$ of length n_1 ;

wherein n_1 is equal to n_2 , and i, j and k are integers; and

achieving timeslot synchronization between the base station and the mobile station using the synchronization channel.

2. (Previously Presented) The method of claim 1, wherein n is equal to 256, n_1 is equal to 16, and n_2 is equal to 16.

3. (Previously Presented) The method of claim 1, further comprising forming the signal sequence $K(i)$ by modulating the second signal sequence as follows: $K(i) = K2(i \bmod n2) * K1(i \div n2)$.

4. (Previously Presented) The method of claim 1, further comprising:
receiving, at the mobile station, a received signal sequence $E(1)$, the signal sequence $K(i)$ being contained in the received signal sequence $E(1)$, the signal sequence $K(i)$ being determined in the mobile station by obtaining a correlation sum S using sections of the received signal sequence $E(1)$;

wherein the mobile station determines the correlation sum S by:

determining a partial correlation sum sequence $TS(z)$ of the second signal sequence using corresponding parts of the received signal sequence $E(1)$;

selecting $n1$ elements of the partial correlation sum sequence $TS(z)$; and

multiplying selected elements of the partial correlation sum sequence $TS(z)$ by first signal sequence elements $K1(j)$.

5. (Previously Presented) The method of claim 4, wherein selecting the $n1$ elements comprises selecting $n1$ in each of $n2$ -th elements of the partial correlation sum sequence $TS(z)$.

6. (Previously Presented) The method of claim 9, further comprising:

receiving, at the mobile station, a received signal sequence $E(1)$, the signal sequence $K(i)$ being contained in the received signal sequence $E(1)$, the signal sequence $K(i)$ being determined in the mobile station by obtaining a correlation sums S using sections of the received signal sequence $E(1)$;

wherein the mobile station determines the correlation sum S by:

determining a partial correlation sum sequence $TS(z)$ for first signal sequence elements $K1(j)$ using selected elements of the received signal sequence $E(1)$; and

multiplying $n2$ elements of the partial correlation sum sequence $TS(z)$ by second signal sequence elements $K2(k)$.

7. (Previously Presented) The method of claim 6, further comprising selecting $n1$ in each of $n2$ -th elements of the received signal sequence $E(1)$ in order to calculate a partial correlation sum TS .

8. (Previously Presented) The method of claim 9, further comprising:

storing partial correlation sums TS in the mobile station; and

using the partial correlation sums in order to determine a further correlation sum S .

9. (Previously Presented) The method of claim 1, further comprising:

determining, in the mobile station, the signal sequence $K(i)$ using information about the first signal sequence element $K1(j)$ and the second signal sequence element $K2(k)$.

10. (Previously Presented) A base station comprising:

a transmitter to transmit a signal sequence $K(i)$ of length n from the base station to a mobile station in a synchronization channel; and

a processing device to obtain the signal sequence $K(i)$ by repeating, n_1 times, a second signal sequence element $K_2(k)$ of length n_2 , the second signal sequence element $K_2(k)$ being modulated with a first signal sequence element $K_1(j)$ of length n_1 , where n_1 and n_2 are equal, and j and k are integers;

wherein timeslot synchronization is achieved between the base station and a mobile station using the synchronization channel.

11. (Currently Amended) A mobile station comprising:

~~a transmitter~~ receiver to ~~transmit~~ receive a signal sequence $K(i)$ of length n from ~~the mobile station~~ to a base station in a synchronization channel; ~~and~~

~~a processing device to obtain~~ wherein the signal sequence $K(i)$ is obtained by repeating, n_1 times, a second signal sequence element $K_2(k)$ of length n_2 , the second signal sequence element $K_2(k)$ being modulated with a first signal sequence element $K_1(j)$ of length n_1 , where n_1 and n_2 are equal, and j and k are integers; and

wherein timeslot synchronization is achieved between the base station and a mobile station using the synchronization channel.

12. (Previously Presented) A signal sequence $K(i)$ of length n , the signal sequence being stored in an information carrier, the signal sequence $K(i)$ being obtainable by:

repeating, n_1 times, a second sequence element $K_2(k)$ of length n_2 ; and

modulating a first sequence element $K_1(j)$ of length n_1 into repeated second sequence elements $K_2(k)$;

wherein n_1 is equal to n_2 , and i , j and k are integers;

wherein the signal sequence $K(i)$ is usable by a mobile station to determine a timing of the base station; and

wherein timeslot synchronization is achievable between the base station and the mobile station using the signal sequence $K(i)$ transmitted over a synchronization channel.